APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,090	12/23/2003	Koichi Kondo	247087US2SRD	8096

22850 7590 01/12/2007	EXAMINER
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314	GEBRESILASSIE, KIBROM K

ART UNIT	PAPER NUMBER
2128	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 October 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-4, 8,9,11,12, and 16-18* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-4, 8,9,11,12, and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

     1.☐ Certified copies of the priority documents have been received.

     2.☐ Certified copies of the priority documents have been received in Application No. _____.

     3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to the amended application filed on October

23, 2006.

2.   Claims 1-18 are pending.

3.   Claims 1, 2, 5-7, and 13-15 are canceled.

4.   New Claims 17 and 18 are added.

5.   Claims 3-4, 8, 9, 11, 12, and 16 are amended.

Response to Arguments

6.   <u>Regarding applicants response to the objection to the specification</u>: Applicants

are deleted the embedded hyperlink shown in the specification. Accordingly, the

objection is withdrawn.

7.   <u>Regarding Applicants response to 102 rejection</u>: Applicant's arguments with

respect to claims have been considered but are moot in view of the new ground(s) of

rejection.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

9.   Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the written description requirement. The claim(s) contains subject matter, which

was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. The claimed invention recites a reading device, an

extracting device, and a generating device, which is nowhere described in the

specification.

Specification

10.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: Claim 18 recites a reading device, an extracting device,

identifying device, and a generating device and the specification does not provide

proper antecedent basis for the claimed subject matter.

Claim Rejections - 35 USC § 101

11.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

12.   Claim 18 is rejected under 35 U.S.C. 101 because the mechanism simulator as a

whole is just an application software operating on an operating system (See:

Specification, page 10 lines 21- 23). Because the claimed invention of Claim 18 is an

apparatus claim, the claim should have associated with physical components in order

to be statutory. Accordingly, Claim 18 is rejected being non-statutory.

MPEP 2106 states as follows:

> " computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the
> programs, are not physical "things." They are neither computer components nor statutory processes, as
> they are not "acts" being performed. Such claimed computer programs do not define any structural and
> functional interrelationships between the computer program and other claimed elements of a computer
> which permit the computer program's functionality to be realized. In contrast, a claimed computer-
> readable medium encoded with a computer program is a computer element which defines structural and

functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions."

Preamble of the Claims

13.   The preambles of independent claims 9, 17, and 18 as presented for examination, have not been given patentable weight. Appropriate weight is given to limitations recited in the body of the claim that are needed for purpose of antecedence. "A mere statement of purpose or intended use in the preamble of a claim need not be considered in finding anticipation; however, it must be considered if the language of a preamble is necessary to give meaning to the claim" Diversitech Corp. v. Century Steps, Inc., 7 USPQ2d 1315 (Fed. Cir. 1988); In re Stencel, 4 USPQ2d 1071 (Fed. Cir. 1987).

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 3-4, 8, 9, 11, 12, and 16-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over B. Silva, K. Richeson, B. Krogh, A. Chutinan, "Modeling and Verifying

Hybrid Dynamic Systems Using Checkmate," PDF File Created on January 12, 2001, in

view of P. Aarnio, K. Koskinen, S. Ylonen, "Using Simulation During Development of

Combined Manipulator and Hybrid Locomotion Platform," PDF File Created on June 18,

2001.

As per Claim 1:

Canceled.

As per Claim 2:

Canceled.

As per Claim 3 (Currently amended):

Silva discloses a mechanism simulation method according to claim 17, wherein

the state transition model inputs a control signal from an external mechanism control

software system (such as *...finite state transition system...*; See: page 5, right side

column, lines 10-12).

As per Claim 4 (Currently amended):

Aarnio discloses a mechanism simulation method according to claim 17, wherein

the mechanism elements include a rotation angle or displacement of an actuator (Such

as *....target joint angle values...*; See: page 4, right side column, under a title "3.1

Kinematic simulation" lines 4-6).

As per Claim 5:

Canceled.

As per Claim 6:

Canceled.

As per Claim 7:

Canceled.

As per Claim 8 (Currently Amended):

Silva discloses a mechanism simulation method according to claim 17, further

comprising storing the generated table to a file (such as ...*data stored in file*

rgsw_param.m..; See: page 4, left side column, 22-23).

As per Claim 9 (Currently Amended):

Silva discloses a computer program stored in a computer readable medium

storing a computer program for performing a mechanism simulation using both hybrid

simulation and a kinematic simulation, wherein in the hybrid simulation, a behavior of a

mechanism is simulated using a hybrid model including a continuous system model and

state transition model, the hybrid model including a continuous system equation having

a plurality of variables, and in the kinematic simulation, a geometrical operation of the

mechanism is simulated using a three-dimensional mechanism model including a

plurality of mechanism elements, when executed by a computer results in performing

steps comprising:

reading data representing the variables of the hybrid model described in a hybrid

language (See: page 4, left side column, 3-8) ;

reading data representing the mechanism elements of the three-dimensional

mechanism model, a plurality of selective variables each of which enables to be

associated with any one of the mechanism elements (See: page 2, left side column,

second paragraph; Fig. 1);

extracting, from the data representing the mechanism elements, a plurality of

selective mechanism elements each of which enables to be associated with any one of

the variables (such as ...*one behavior IN enabled .....and another behavior OUT is*

enforced in the system...; See: page 2, left side column, Second paragraph lines 8-18);

and

receiving a selection which is made by a user (See: page 4, left side column,

lines 20-23) and is indicative of a combination of one of the plurality of selective

variables and one of the plurality of selective mechanism elements (such as...

parameters and variables; See: page 4, left side column, lines 3-6), to generate a table

that represents a correspondence between the variables and the mechanism elements

based on the selection (See: the table in page 4, left side column), wherein the one of

the plurality of selective variables in the combination is selected by selecting a class of

predefined hybrid model to which the selective variables belong, and selecting a

member variable in the class (See: page 4, right side, under a title "4. Representation of

Hybrid Systems in Checkmate", lines 1-10);

calculating a value of one of the variables of the continuous system equation by a

first simulator that executes the hybrid simulation (See: page 3, right side column, lines

1-10);

identifying a mechanism element corresponding to a variable having the

calculated value, referring to the table (See: page 4, left side column, lines 1-8);

Silva fails to disclose transmitting, to a second simulator, information specifying the identified mechanism element and the calculated value of the variable; and executing the kinematic simulation by the second simulator based on the information.

Aarnio discloses transmitting, to a second simulator, information specifying the identified mechanism element and the calculated value of the variable; and executing the kinematic simulation by the second simulator based on the information (See: page 4, right side column, under a title "Kinematic Simulations" lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Aarnio et al with Silva et al because both references are clearly concerned with hybrid dynamic systems. The motivation for doing so would have been convenient to transmitting and executing the kinematic simulation by the second simulator based on the information, as taught by Aarnio et al, to the system of Silva et al to visualize and monitor the correctness of the algorithm.

As per Claim 10:

Canceled.

As per Claim 11:

Silva discloses a computer readable medium according to claim 9, wherein the state transition model inputs a control signal from an external mechanism control software system (such as ...*finite state transition system*...; See: page 5, right side column, lines 10-12).

As per Claim 12:

Aarnio discloses a computer readable medium according to claim 9, wherein the

mechanism elements include a rotation angle or displacement of an actuator (Such as.

...*target joint angle values*...; See: page 4, right side column, under a title "3.1

Kinematic simulation" lines 4-6).

As per Claim 13:

Canceled.

As per Claim 14:

Canceled.

As per Claim 15:

Canceled.

As per Claim 16:

Silva discloses a computer readable medium according to claim 9, further

comprising instructing the computer to store the generated table to a file (such as

...*data stored in file rgsw_param.m.*.; See: page 4, left side column, 22-23).

As per Claims 17 and 18 (New):

The limitations of claims 17 and 18 have already been discussed in the rejection

of Claim 9. They are therefore rejected under the same rationale.

Conclusion

16.   Claims 3-4, 8, 9, 11, 12, and 16-18 are rejected.

17.   Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

18.   In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

19.   Any inquiring concerning this communication or earlier communication from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is (571) 272-8571. The examiner can normally be reached on Monday-Friday, 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Kamini S. Shah can be reached at (571) 272-2279. The official fax number is (571) 273-8300. Any inquiring of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is (571) 272-3700.

KAMINI SHAH
SUPERVISORY PATENT EXAMINER